

AMENDMENTS TO THE CLAIMS

In the claims, please add new claims 34 and 35 and amend claims 1 and 25 as follows:

1. (currently amended) A method of generating antibodies ~~genetic immunization method to induce an immune response~~ specific to an antigen in mammals comprising:
 - a) providing a nucleic acid sequence encoding a peptide containing at least one antigenic determinant of said antigen, operatively linked to one or more control sequences such that said nucleic acid sequence is capable of being expressed in a cell in said mammals;
 - b) optionally formulating said nucleic acid sequence into a particle by complexation with one or more polymers;
 - c) injecting said nucleic acid sequence into a vessel connected to a tissue in said mammals
 - d) elevating intravascular pressure and increasing vascular permeability, thereby delivering said nucleic acid sequence to an extravascular cell in said tissue[,]] and expressing said nucleic acid sequence in said cell; ~~and~~;
 - e) generating the immune response in a majority of individual mammals injected; ~~and, for the purpose of utilizing the immune response, such use is selected from the list consisting of: immunizing mammals, vaccinating mammals; inducing a cellular immune response, inducing a humoral immune response, producing~~
 - f) isolating antibodies specific to said antigen from said mammals; ~~and producing immune cells that produce antibodies to the antigen.~~
2. (previously presented) The method of claim 1, wherein said extravascular cell is a lymphoid cell.
3. (previously presented) The method of claim 2, wherein said extravascular cell is a gut-associated lymphoid cell.
4. (previously presented) The method of claim 2, wherein said extravascular cell is a nasal lymphoid cell.
5. (previously presented) The method of claim 1, wherein said extravascular cell consists of a liver cell.
6. (previously presented) The method of claim 1, wherein said extravascular cell consists of a muscle cell.
7. (original) The method of claim 1, wherein said nucleic acid is further protected by a coating.

8. (canceled)
9. (previously presented) The method of claim 1 wherein said vessel consists of a tail vein.
10. (original) The method of claim 1, wherein said sequence is a DNA sequence.
11. (original) The method of claim 10, wherein said DNA sequence is a plasmid.
12. (previously presented) The method of claim 1, wherein said mammals consists of rodents.
- 13-24. (canceled).
25. (currently amended) A method of generating antibodies specific to an antigen comprising:
 - a) providing a ~~non-viral~~ nucleic acid encoding at least one antigenic determinant of said antigen wherein the nucleic acid is either naked nucleic acid or is associated with a non-viral particle;
 - b) injecting said ~~non-viral~~ nucleic acid into a tail vein of rodents thereby delivering said non-viral nucleic acid to a liver cell wherein said antigen is expressed in a majority of the injected rodents and an immune response directed against the expressed antigen is induced; and,
 - c) isolating from said rodents said antibodies or immune cells producing said antibodies.
26. (previously presented) The method of claim 25 wherein said nucleic acid is complexed to a polymer.
27. (previously presented) The method of claim 26 wherein said rodents consists of mice.
- 28-33. (canceled)

34. (new) A method of vaccinating mammals comprising:

- a) providing a nucleic acid sequence encoding a peptide containing at least one antigenic determinant of said antigen, operatively linked to one or more control sequences such that said nucleic acid sequence is capable of being expressed in a cell in said mammals;
- b) optionally formulating said nucleic acid sequence into a particle by complexation with one or more polymers;
- c) injecting said nucleic acid sequence into a vessel connected to a tissue in said mammals
- d) elevating intravascular pressure and increasing vascular permeability, thereby delivering said nucleic acid sequence to an extravascular cell in said tissue and expressing said nucleic acid sequence in said cell;
- e) generating the immune response in a majority of individual mammals injected; and,
- f) vaccinating said mammals.

35. (new) A method of generating immune cells that produce antibodies to a desired antigen comprising:

- a) providing a nucleic acid sequence encoding a peptide containing at least one antigenic determinant of said antigen, operatively linked to one or more control sequences such that said nucleic acid sequence is capable of being expressed in a cell in said mammals;
- b) optionally formulating said nucleic acid sequence into a particle by complexation with one or more polymers;
- c) injecting said nucleic acid sequence into a vessel connected to a tissue in said mammals
- d) elevating intravascular pressure and increasing vascular permeability, thereby delivering said nucleic acid sequence to an extravascular cell in said tissue and expressing said nucleic acid sequence in said cell;
- e) generating the immune response in a majority of individual mammals injected; and,
- f) isolating from said mammals immune cells that produce antibodies to said antigen.